



SAFETY DATA SHEET

According to 29 CFR 1910.1200

SODIUM HYDROXIDE FLAKES

Date of issue: September 01, 2023 Revision date: - Version: 1

SECTION 1.- IDENTIFICATION OF THE SUBSTANCE / MIXTURE AND OF THE COMPANY / UNDERTAKING

1.1 Product identifier

Product form Solid
Substance name Sodium hydroxide flakes
CAS No. 1310-73-2
Formula NaOH
Synonyms Caustic soda

1.2 Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture Fertilizers

1.3 Details of the supplier of the safety data sheet

Química Pima, S.A. de C.V.
Del Cobre 20, Parque Industrial Hermosillo
Hermosillo, Sonora, México. C.P. 83297 Tel. 011 (662) 251-0010 / (662) 251-0316
ventas@qpima.com
www.qpima.com

1.4 Emergency telephone number

Emergency number CHEMTREC (24HR Emergency Telephone), call: 1-800-424-9300

SECTION 2.- HAZARD IDENTIFICATION

2.1 GHS-US classification

May be corrosive to metals	1	H290
Causes severe skin burns and eye damage	1	H314
Causes serious eye damage	1	H318
May cause respiratory irritation.	3	H335
Harmful to aquatic life.	3	H402

2.2 Label elements

GHS-US labelling

Hazard pictograms (GHS-US)



Signal Word (GHS-US):

Danger

Hazard statement (GHS-US):

H290 May be corrosive to metals
H314 Causes severe skin burns and eye damage.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H402 Harmful to aquatic life.

Precautionary statements (GHS-US):

P101 If medical advice is needed, have a product container or label at hand.
P102 Keep out of reach of children.
P103 Read label before use
P234 Keep only in original container.



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P260 Do not breathe dust/fume/gas/mist/vapors/spray.
P264 Wash your hands thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P271 Use only outdoors or in a well-ventilated area.
P273 Avoid release to the environment.
P280 Wear protective gloves/protective clothing/eye protection/face protection.
P301+P330+P331 IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 IF ON SKIN (or hair): Take off Immediately all contaminated clothing. Rinse SKIN with water.
P363 Wash contaminated clothing before reuse.
P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing.
P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do - continue rinsing.
P307+P311 IF exposed: call a POISON CENTER or doctor/physician.
P310 Immediately call a POISON CENTER or doctor/physician.
P321 Specific treatment (See section 4 of this SDS).
P363 Wash contaminated clothing before reuse.
P390 Absorb spillage to prevent material damage.
P403+P233 Store in a well-ventilated place. Keep container tightly closed.
P405 Store locked up.
P406 Store in corrosive resistant containers that are not made of aluminum with a resistant inner liner.
P501 Dispose of the contents/container in accordance with federal, state, and local laws.

2.3 Other hazards

This material is corrosive. It can cause severe burns and permanent damage to any tissue it comes into contact with. Toxicity may be delayed and may not be easily visible. To treat contact tissue, it must be flushed with water to dilute. There is no specific antidote. Significant exposures should be referred for immediate medical attention.

2.4 Unknown acute toxicity (GHS-US)

Not applicable

SECCIÓN 3.- COMPOSITION / INFORMATION OF INGREDIENTS

3.1 Substance

Not applicable

3.2 Mixture

Name	Product identifier	%
Sodium hydroxide	(CAS No.) 1310-73-2	> 98

SECCIÓN 4.- FIRST AID MEASURE

4.1 Description of first aid measure

First-aid measures general

Check vital signs. Unconscious: keep airways clear and provide breathing assistance. Respiratory arrest: artificial respiration or oxygen. Cardiac arrest: perform CPR. Conscious



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victim with breathing difficulty: semi-upright position. Victim in shock: lying on back with legs slightly elevated. Vomiting: prevent choking or aspiration. Avoid cooling by covering the victim (without heating). Continue monitoring the victim. Provide psychological support. Keep the victim calm, and avoid physical strain. Depending on the victim's condition: seek medical attention/hospital. Never give anything by mouth to an unconscious person. If feeling unwell, seek medical attention (if possible, show the label).

First-aid measures after eye contact

GET MEDICAL ATTENTION IMMEDIATELY. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Remove contact lenses if worn and easily removable. Continue rinsing for at least 20 minutes. Chemical burns should be treated immediately by a physician. Rinsing the eyes within seconds is essential to achieve maximum effectiveness.

First-aid measures after skin contact

Immediately wash exposed areas with plenty of water (for 15 minutes) / shower. Do not apply chemical-neutralizing agents. Remove all contaminated clothing, jewelry, and shoes while washing. Do not remove clothing if it sticks to the skin. Cover wounds with a sterile bandage. SEEK MEDICAL ATTENTION IMMEDIATELY. Thoroughly clean and dry contaminated clothing before reuse. Dispose of contaminated leather items.

First-aid measures after inhalation

If mist, vapors, or aerosols are inhaled and adverse effects occur as a result, move the victim to an uncontaminated area. Determine if there is airway constriction, if breathing is occurring, and if blood is circulating. SEEK MEDICAL ATTENTION IMMEDIATELY. There is no specific antidote; treat symptomatically.

First-aid measures after ingestion

If ingested, do not induce vomiting. In case of confirmed or suspected ingestion, do not administer fluids orally. If vomiting occurs spontaneously, keep the airways clear. Monitor the airways. Intravenous fluids may be required for volume resuscitation and circulatory assistance (CPR). Never administer anything orally to an unconscious person or someone experiencing seizures. SEEK MEDICAL ATTENTION IMMEDIATELY.

4.2 Most important

Symptoms/injuries after inhalation

Respiratory system effects: Exposure to airborne material can irritate, redness of the upper and lower respiratory tract, coughing, laryngospasms, edema, breathing difficulties, bronchoconstriction, and possibly pulmonary edema. Severe and permanent scarring may occur. Pulmonary edema may develop several hours after severe acute exposure. Inhaling this material can lead to the same disorders.

Symptoms/injuries after skin contact

Corrosion and caustic burns on the skin. Skin exposure can cause redness, itching, irritation, swelling, burns (first, second, or third degree), liquefaction of the skin, and damage to underlying tissues (deep and painful wounds). Slow-healing wounds.

Symptoms/injuries after eye contact

Severe eye damage. Eye exposures can cause burns to the eyelids, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to the eye contents, permanent visual defects, blindness, and/or loss of the eye.

Symptoms/injuries after ingestión

Vomiting, diarrhea. Burns to the gastric/intestinal mucosa. Possible esophageal perforation. Gastrointestinal tract bleeding. Shock. AFTER ABSORPTION OF HIGH AMOUNTS: Disturbances of consciousness.

Chronic symptoms

Dry skin. Skin rash/inflammation. Possible inflammation of the respiratory tract.

4.3 Indications of any immediate medical attention and special treatment needed



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It is recommended to observe and medically evaluate all cases of ingestion and eye exposure, as well as symptomatic inhalation and skin exposure. In cases of symptomatic ingestion, do not administer fluids orally and consider exploration through endoscopy, radiography, or computed tomography (CT). Esophageal perforation, airway compromise, hypotension, and shock may occur. In the case of prolonged and significant exposure, consider late injuries to the exposed tissues. There is no antidote. Treatment consists of palliative care. Follow normal parameters for airway, breathing, and circulation. Surgical intervention may be required.

SECCIÓN 5.- FIREFIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media Use dry chemical powder, foam, sand, CO₂, or water spray. Use the product according to surrounding materials.

Unsuitable extinguishing media Solid water stream is ineffective as an extinguishing medium.

5.2 Special hazard arising from the substance or mixture

Fire hazard Sodium hydroxide fumes may be generated by thermal decomposition at elevated temperatures.

Explosion hazard It can react with chemically reactive metals such as aluminum, zinc, magnesium, copper, etc., to release hydrogen gas which can form explosive mixtures with air.

Reactivity Exothermic violent reaction with water: risk of fire. Absorbs atmospheric CO₂. Exothermic violent reaction with some acids. It can be corrosive to metals.

5.3 Advice for firefighters

Precautionary measures fire In case of fire/heating: stand against the wind. If exposed to fire/heat consider evacuation

Firefighting instructions If it can be done without risk, remove the container from the fire area. Cool containers with water. Do not apply water directly to this product. Heat is generated when mixed with water. Use a NIOSH-approved positive pressure self-contained breathing apparatus operated in the pressure demand mode. Avoid skin contact.

Protection during firefighting Use a self-contained breathing apparatus. Structural firefighter protective clothing provides limited protection in fire situations ONLY; it may not be effective in spill situations. For major spills, wear chemical protective clothing specifically recommended by the manufacturer. This may provide little or no thermal protection.

SECCIÓN 6.- ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment, and emergency procedures

6.1.1 For non-emergency personnel

Protective equipment Gloves, face shield, corrosion-resistant suit. Large spills/in confined spaces: Level B or A equipment. Refer to "Handling and storage" for selecting protective clothing.

Emergency procedures Secure the hazard area, do not allow any type of flame to ignite. Wash contaminated clothing. Large spills/in confined spaces: consider evacuation. In case of hazardous reactions: stay upwind. In case of reactivity hazard: consider evacuation.

Measures in case of dust release Ventilate immediately, especially in low-lying areas where vapors may accumulate.

6.1.2 For emergency responders

Where specialized garments are required to manage the spill/leak, refer to any information in Section 8 regarding suitable and unsuitable materials. Keep the area ventilated.

6.2 Environmental precautions

Contain the solid and cover it to prevent its dispersion into the environment. Prevent the dust from reaching water bodies.

6.3 Methods and material for containment and cleaning up



Method for containment
Method for cleaning up

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Collect the product with a shovel and place it into an appropriate container. Sweep or vacuum while avoiding the dispersion of dust. Lightly moistening may be necessary. Clean or wash the contaminated area thoroughly. Dispose of the water and collected residue in labeled containers for disposal as chemical waste.

6.4 Reference to other sections

For further information refer to section 8: Exposure-controls/personal protection

SECTION 7.- HANDLING AND STORAGE

7.1 Precautions for safe handling

Precautions for safe handling

Prohibited to eat, drink, or smoke during handling. Avoid contact with eyes, skin, and clothing. Wash arms, hands, and nails after handling this product. The use of gloves is recommended. Provide access to safety showers and emergency eye wash stations. Avoid inhaling the product. Keep container tightly closed. Use with adequate ventilation. Handle containers with care.

Hygiene measures

Do not drink, eat, or smoke in the workplace. Always wash your hands after handling the product. Do not eat, drink, or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions

Store in a clean, dry, and well-ventilated area. Protect from sunlight. Periodically inspect containers for leaks and breakage. Keep containers tightly closed. Stack bags or sacks in piles no higher than three meters. Do not place bags or sacks directly on damp floors. Use pallets to elevate them. Avoid contaminating powders. Prevent physical damage to packaging. Keep incompatible substances isolated. Do not store near aluminum or magnesium. Empty bags or sacks of this material may be hazardous as they could contain residues, and they should not be cleaned for temporary reuse. Install caution signs that inform about the risks and the obligation to use personal protective equipment.

Incompatible products

Strong oxidizing agents, acids, light metals, and alloys (aluminum, bronze, brass, etc.).

Heat-ignition

In contact with materials such as zinc, aluminum, magnesium, or titanium, it forms flammable hydrogen gas.

Storage area

Store in a clean, dry, and well-ventilated area. Protect from sunlight. Keep incompatible substances isolated. Do not store near aluminum or magnesium.

Special rules on packaging

Store in a tightly sealed, dry, clean, and properly labeled container. Comply with applicable regulatory requirements. Secure fragile packaging in sturdy containers.

Packaging materials

Recommended material: stainless steel, nickel, polyethylene, polypropylene, glass, earthenware/porcelain. Material to avoid: lead, aluminum, copper, tin, zinc, bronze.

7.3 Specific end use(s)

No additional information is available

SECTION 8.- EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Sodium hydroxide	2.0 mg/m ³	2.0 mg/m ³	10.0 mg/m ³



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8.2 Exposure controls

Appropriate engineering controls

Use local exhaust ventilation where dust or gases may be generated. Ensure compliance with corresponding exposure limits. Types of protective materials: natural rubber, neoprene, nitrile, polyvinyl chloride (PVC).

Personal protective equipment

Safety goggles, N95 respirator, gloves, protective clothing/suit/boots.

Material for protective clothing

Natural rubber, neoprene, nitrile, or polyvinyl chloride (PVC).

Hand protection

Use appropriate gloves, resistant to chemicals, made of natural rubber, neoprene, nitrile, and polyvinyl chloride (PVC), with long cuffs. Consult with a glove supplier for advice when selecting an appropriate chemical-resistant glove.

Eye protection

When applicable, use chemical splash safety goggles with facial protection against eye and skin contact. Install an emergency eye wash station and a pressure shower in the immediate work area.

Skin and body protection

Wear protective clothing to minimize skin contact. When there is a possibility of contact with wet material, use Tychem® or a similar chemical-resistant protective suit. When there is a possibility of contact with dry material, use disposable coveralls suitable for dust exposure, such as Tyvek®. Always tuck pants into boots. Wash and thoroughly dry contaminated garments before reuse. Dispose of contaminated leather materials.

Before handling this product, appropriate footwear and any additional skin protection measures based on the task being performed and associated risks should be chosen, with approval from a specialist. Recommended options include footwear resistant to chemicals made of natural rubber, neoprene, nitrile, or polyvinyl chloride (PVC). Contact your personal protective equipment supplier to verify the compatibility of equipment for the intended purpose.

Respiratory protection

It may be permissible to use an approved N95 respirator (for dust, fumes, vapors) in certain circumstances where it is anticipated that airborne concentrations may exceed exposure limits or when symptoms indicative of overexposure are observed. When workplace conditions justify the use of a respirator, a respiratory protection program complying with applicable regulatory requirements should be followed.

Environmental exposure controls

Avoid release to the environment.

SECTION 9.- PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Solid flakes
Odor	Odorless
Color	White
Molecular mass	40.01 g/mol
Odor threshold	No data available
pH	13.0 - 14.0
pH solution	No data available
Relative evaporation rate (butyl acetate = 1)	No data available
Melting/Freezing point	No data available
Boiling point	1390 °C (2534 °F)



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Flash point	No data available
Self-ignition temperature	No data available
Decomposition temperature	No data available
Flammability (solid, gas)	Non-flammable
Vapor pressure	No data available
Relative vapor density at 20 °C	No data available
Relative density	2.13 (20 °C)
Solubility	111 g/100 g in water
Log Pow	No data available
Log Kow	No data available
Viscosity, kinematic	No data available
Viscosity, dynamic	No data available
Explosive properties	No data available
Oxidizing properties	No data available
Explosive limits	No data available

9.2 Other information

No additional information is available

SECTION 10.- STABILITY AND REACTIVITY

10.1 Reactivity	The material will not react dangerously. It is highly hygroscopic; with low air moisture, it reacts with carbon dioxide in the air to form sodium carbonate.
10.2 Chemical stability	Stable under recommended storage conditions.
10.3 Possibility of hazardous reactions	Produce flammable hydrogen gas. Mixing with water, acid, or incompatible materials may cause splattering and release of large amounts of heat. Flammable hydrogen gas may form when reacting with some metals. Carbon monoxide gas can form upon contact with reducing sugars, foodstuffs, and beverages in enclosed spaces.
10.4 Conditions to avoid	Avoid high temperatures and contact with acids.
10.5 Incompatible materials	Acids and halogenated compounds, prolonged contact with aluminum, brass, bronze, copper, lead, tin, zinc, or other alkali-sensitive metals or alloys, releases heat when diluted in water.
10.6 Hazardous decomposition products	Toxic gases of sodium oxide. Thermal decomposition generates corrosive vapors.

SECTION 11.- TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Likely routes of exposure	Skin and eyes contact, inhalation, and ingestion.
Acute toxicity	Corrosive. This substance can cause severe burns and permanent damage to any tissue it comes into contact with. It can cause severe burns and extensive tissue destruction resulting in liquefaction, necrosis, and/or perforation.
Skin corrosión/irritation	Corrosive. Causes severe burns to the skin. Prolonged or repeated exposures may result in dermatitis.



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Serious eye damage/irritation

Eye exposures can cause burns to the eyelids, conjunctivitis, corneal edema, corneal burn, corneal perforation, damage to the eye contents, permanent visual defects, and blindness and/or eye loss.

Respiratory or skin sensitization

It can cause severe irritation to the respiratory tract, leading to coughing, choking, pain, and possibly burns to the mucous membranes. This material can be extremely destructive to mucous membrane tissue and the respiratory system.

Germ cell mutagenicity

Not classified.

Carcinogenicity

Not classified.

Reproductive toxicity

Not classified.

Specific target toxicity (single exposure)

This substance can cause severe burns and permanent damage to any tissue it comes into contact with. It can cause severe burns and extensive tissue destruction resulting in liquefaction, necrosis, and/or perforation.

Specific target toxicity (repeat exposure)

Repeated or prolonged contact with the skin can result in dermatitis.

Aspiration hazard

Exposure to airborne material can cause irritation, redness of the upper and lower respiratory tract, coughing, laryngospasm, edema, difficulty breathing, bronchoconstriction, and possibly pulmonary edema. Severe permanent scarring may occur. Pulmonary edema may develop several hours after severe acute exposure. Inhaling this material can lead to the same disorders.

Name	LD ₅₀ oral	LD ₅₀ dermal	LC ₅₀ inhalation
Sodium hydroxide	No data available	No data available	No data available

SECTION 12.- ECOLOGICAL INFORMATION

12.1 Toxicity

Ecology – General

Classification concerning the environment: not applicable.

Ecology – Air

Not classified as dangerous for the ozone layer.

Ecology – Water

This material has demonstrated toxicity to aquatic organisms. The provided data corresponds to sodium hydroxide:

EC₅₀ *O. mykiss* (> 100 mg/l, 48 h).

EC₅₀ Shrimp (33 - 100 ppm, 48h).

EC₅₀ Cockle (330-1000 ppm, 48h).

EC₅₀ *D. magna* (40 mg/l, 48 h)

EC₅₀ *P. subcapitata* (> 100 mg/l, 48 h)

EC₅₀ *T. pyriformis* (22 mg/l, 48 h)

EC₅₀ *D. rerio* (> 1 mg/l, 14 d)

EC₅₀ *D. magna* (> 1 mg/l, 14 d)

12.2 Persistence and degradability

This material is inorganic and does not biodegrade. It is alkaline and may increase the pH of surface waters with low buffering capacity. It is believed that this material exists in a dissociated state in the environment.

12.3 Bioaccumulative potential

It does not contain bioaccumulative components.



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12.4 Mobility in soil

No data available

12.5 Other adverse effects

Other information

This material has shown mild toxicity to terrestrial organisms. This material has shown moderate toxicity to aquatic organisms.

SECCIÓN 13.- INFORMACIÓN RELATIVA A LA ELIMINACIÓN DE LOS PRODUCTOS

13.1 Waste treatment methods

Waste treatment methods

Waste generation should be avoided or minimized whenever possible. Disposal of this product, its solutions, and any by-products must always comply with environmental protection and waste disposal legislation and all requirements of local authorities. Dispose of surplus and non-recyclable products through an authorized contractor for disposal. Waste should not be disposed of untreated down drains or to the environment unless compatible with the requirements of all relevant authorities. Avoid dispersal of spilled material, and contact with soil, aquatic environments, drains, and sewers.

Waste disposal recommendations

Dispose of following national, state, and local regulations. Dispose of product waste and containers with all possible precautions. Care should be taken when handling empty containers that have not been cleaned or rinsed. Empty containers or liners may retain product residues.

SECTION 14.- TRANSPORT INFORMATION

14.1 UN Number

1823

14.2 UN proper shipping name

SODIUM HYDROXIDE, SOLID

14.3 Class of hazards in transportation

8

14.4 Packaging group

II

14.3 Additional information



Other information

No supplementary information is available.

Overland transport

No additional information is available.

Transport by sea

No additional information is available.

Air transport

No additional information is available.

SECTION 15.- REGULATORY INFORMATION

International inventories

TSCA No data available

TSCA – Toxic Substances Control Act Inventory Section 8(b).

DSL/NDSL - Domestic Substance List/Non-Domestic Substance List.

US Federal Regulations: Not listed in the Toxic Substances Control Act Inventory

SARA 311/312 Categories.



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Acute Health Hazard Yes Chronic Health Hazard No Fire Hazard No
Sudden Hazardous Pressure Release No Reactive Hazard No

Clean Water Act. No data available

CERCLA. No data available

SECTION 16.- OTHER INFORMATION

NFPA	NFPA health Hazard	3	NFPA fire Hazard	0	NFPA instability Hazard	1	NFPA Special hazard	-
HMIS III	Health	3	Flammability	0	Physical	1	Personal protection	E

Splash goggles, gloves, and vapor respirator.

E



Made for: Química Pima, S.A. de C.V. Del Cobre No. 20 Parque Industrial. Hermosillo, Sonora, México. 83297.

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IMPORTANT NOTE: Information in this SDS is from available published sources and is believed to be accurate, but is not exhaustive and will be used only as a guide, which is based on current knowledge of the chemical substance or mixture and applied to the appropriate product for safety precautions. No warranty, express or implied, is made and Pima Chemicals & Fertilizers, LLC and Quimica Pima, S.A. de C.V. assumes no liability resulting from the use of this SDS. The user must determine the suitability of this information for his application.

End of Safety Data Sheet